ABSTRACT

Background. Microorganism that cause dental caries activity on the outer surface of the teeth may spread into the pulp and root canal then cause root canal infection. The study found the dominance of bacteriae Streptococcus viridans in root canal infection. Root canal infection needs root canal treatment. Root canal irrigation will support the success of root canal treatment. Red betel leaf are known to contain flavonoid and polyvenolad that have antimicrobacterial effect. Antimicrobacterial effect is one of the condition in a good irrigation materials.

Purpose. The aim of the study was to evaluate an antibacterial potency and to determine the minimum inhibitory concentration and minimum bactericidal concentration of red betel leaf infusion (Piper crocatum) against of Streptococcus viridans.

Method. This research was a laboratory experimental study. A serial dilution method was used to determine the minimum inhibitory concentration of red betel leaf infusion (Piper crocatum) and then to determine minimum bactericidal concentration is done with colony counting bacteriae in blood agar media. Growth of bacterial colonies in blood agar is calculated manually in colony forming unit (cfu).

Result. At the concentration of 6.25%, 12.5% and 25% there are a decrease in the number of Streptococcus viridans bacterial colonies when compared with positive control group. There are significant differences in each study group (p<0.05). Minimum inhibitory concentration was revealed at 12.5% concentration from serial dilution test. At the concentration of 25% was not revealed any bacterial growth of Streptococcus viridans, it was because the antibacterial effect of red betel infusion has reached minimum bactericidal concentration.

Conclusion. The Minimum Inhibitory Concentration (MIC) of red betel leaf infusion against of Streptococcus viridans was at 12.5% concentration and the Minimum Bactericidal Concentration (MBC) was at 25% concentration.

Key words: Sirih merah, Piper crocatum, Streptococcus viridans, Minimum Inhibitory Concentration (MIC), Minimum Bactericidal Concentration (MBC).